



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

APPL. NO: 10/734,372

APPLICANT: Williams et al.

EXAMINER: Steven H. Standley

FILED: December 12, 2003

DOCKET NO.: 023868.43877

CUSTOMER NO.: 28,172

TITLE: Method for Determining Sensitivity
to Environmental Toxins and
Susceptibility to Parkinson's Disease

DECLARATION OF RICHARD JAY SMEYNE

1. I, Richard Jay Smeyne, am one of the inventors of the U.S. Patent Application Serial Number 10/734,372 filed December 12, 2003. I am an Associate Member of the Department of Developmental Neurobiology at St. Jude Children's Research Hospital, Memphis, Tennessee. My curriculum vitae is attached as Appendix Tab A.

2. A Western Blot of blood samples from MPTP – sensitive and MPTP resistant mice was conducted for GSTpi to differentiate the response from those two animals. This was accomplished by collecting blood from mice into a heparinized tube. We then split the sample into two and added MPP+ (a toxic metabolite of MPTP) to one of the tubes, we added MPP+ to whole blood and waited 45 minutes. We then spun the blood to into component parts (serum, WBC's and RBC's) and then did Western Blots for GSTpi on each component. We found that we could differentiate the effects on the RBS fraction only. This was not surprising since it has been published that GSTpi is in the RBC and platelets.

3. The results of this experiment are shown in Appendix Tab B. These results confirm that the methods disclosed in U.S. Patent Application Serial Number 10/734,372 work using blood samples.

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.



Richard Smeyne

Digitally signed by Richard Smeyne
DN: cn=Richard Smeyne, c=US
Date: 2006.11.07 10:55:35 -06'00'

RICHARD JAY SMEYNE

DATE: _____

11/7/06

CERTIFICATE OF MAILING

I hereby certify that this correspondence is being deposited with the United States Postal Service as first class mail, postage prepaid, on November 10, 2006, in a package addressed to: Mail Stop: AMENDMENT Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

Terri Warner
Terri Warner



CURRICULUM VITAE

September 2006

NAME: RICHARD JAY SMEYNE

DATE & PLACE OF BIRTH: November 3, 1959; Philadelphia, PA

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HOME ADDRESS: 10394 Hulsey Circle
Collierville, Tennessee 38107
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ACADEMIC DEGREES:

BS	1981	St. Joseph's University, Philadelphia, PA (Biology)
MA program	1983	University of Hartford, Department of Psychology, West Hartford, CT
PhD	1989	Thomas Jefferson University, Department of Anatomy, Philadelphia, PA

PROFESSIONAL APPOINTMENTS:

1989-92	Postdoctoral Fellow, Department of Neurosciences, Roche Institute of Molecular Biology, Nutley, New Jersey (Dr. James Morgan)
1992-94	Research Investigator, Department of Molecular Biology, Bristol-Myers Squibb Pharmaceutical Research Institute, Princeton, New Jersey
1994-96	Head, Neurogenetics Program, Department of CNS Research, Hoffman-LaRoche Ltd, Nutley, New Jersey
1996 to Present	Associate Member, Department of Developmental Neurobiology, St. Jude Children's Research Hospital, Memphis, Tennessee

EDITORIAL BOARDS:

1999-2001	Brain Research Gene Expression
2000-2002	Gene Expression Patterns
2001-present	Molecular Brain Research - Associate Editor
2001-present	Developmental Brain Research - Associate Editor

PROFESSIONAL SOCIETY MEMBERSHIPS:

American Association for the Advancement of Science
Society for Neuroscience
International Brain Research Organization

HONORS AND AWARDS:

Sigma Xi Research Award - Thomas Jefferson University, Philadelphia, PA, 1985
Rothschild Fellow - Roche Institute of Molecular Biology, Nutley, NJ, 1990-1992

RESEARCH INTERESTS:

Genetics of neurodegeneration, Parkinson's disease, effect of drugs of abuse on neural development and cerebellar development.

GRANT SUPPORT:*CURRENT-*

- 1) NINDS 5 RO1NS039006-05 - "Genetics of MPTP-induced parkinsonism" 2004-2009
- 2) NINDS 5 R21NS045906-02 - "Role of environment in neuroprotection" 2004-2006
- 3) 5U01MH061971-05 - "Targeted mutagenesis of the mouse genome and neural phenotype" 2000-2004 (Goldowitz-PI)
- 3) 5R01ES10772-05 - "Role of glia in Parkinson's disease" 2000-2005 (Morgan-PI, Smeyne-Co-PI)

PREVIOUS:

- 1) NINDS 1 F32NS08680-02 - "Gene expression in development cerebellum" NRSA Fellow, 1989-91 (Morgan lab)
- 2) NINDS 1 F32NS09049-01 - "Transgenic Model of Proto-Oncogene Expression in CNS" NRSA Fellow, 1991 (Morgan lab)
- 3) Rothschild Fellowship - Roche Institute of Molecular Biology, Nutley, NJ, 1990-1992
- 4) NINDS RO1NS039006-04 - "Genetics of MPTP-Induced Parkinsonism" 1999-2004
- 5) National Parkinson's Foundation - "Determination of QTL for MPTP sensitivity" 2000-2001
- 6) NIA AG RO118245-02 - "Histological Phenotyping of the Mouse Nervous System" 2000-2002 (Goldowitz-PI)
- 7) National Parkinson's Foundation - "Role of Environment in Neuroprotection" 2001-2003 (Fellowship support - Faherty)
- 8) NIDA 1F31DA14464-03 - "Effects of Drugs on Cell Migration and Proliferation" 2002-2005 (Fellowship support - Lloyd)

PUBLICATIONS:**Original Articles**

1. Holmes GL, Thompson JL, Smeyne RJ, Wallace RB. Failure of neocortical transplants to alter seizure susceptibility in previously kindled rats. *Epilepsia* 28:242-250, 1987.
2. Smeyne RJ, Goldowitz D. Development and death of external granular layer cells in the weaver mouse cerebellum: a quantitative study. *J Neurosci* 9:1608-1620, 1989.
3. Reeves RH, Crowley MR, Lorenzon N, Pavan WJ, Smeyne RJ, Goldowitz D. The mouse neurological mutant weaver maps within the region of chromosome 16 that is homologous to human chromosome 21. *Genomics* 5:522-526, 1989.
4. Smeyne RJ, Goldowitz D. Purkinje cell loss is due to a direct action of the weaver gene in Purkinje cells: evidence from chimeric mice. *Brain Res Dev Brain Res* 52:211-218, 1990.
5. Smeyne RJ, Goldowitz D. Postnatal development of the wild-type and weaver cerebellum after embryonic administration of propylthiouracil (PTU). *Brain Res Dev Brain Res* 54:282-286, 1990.
6. Oberdick J, Smeyne RJ, Mann JR, Zackson S, Morgan JI. A promoter that drives transgene expression in cerebellar Purkinje and retinal bipolar neurons. *Science* 248:223-236, 1990.
7. Smeyne RJ, Pickford LB, Rouse RV, Napieralski J, Goldowitz D. Abnormalities in premigratory granule cells in the weaver cerebellum defined by monoclonal antibody OZ42. *Anat Embryol* 183:213-219, 1991.

8. Smeyne RJ, Oberdick J, Schilling K, Berrebi AS, Mugnaini E, Morgan JI. Dynamic organization of developing Purkinje cells revealed by transgene expression. *Science* 254:719-721, 1991.
9. Smeyne RJ, Schilling K, Robertson L, Luk D, Oberdick J, Curran T, Morgan JI. Fos-lacZ transgenic mice: mapping sites of gene induction in the central nervous system. *Neuron* 8:13-23, 1992.
10. Smeyne RJ, Curran T, Morgan JI. Temporal and spatial expression of a *fos-lacZ* transgene in the developing nervous system. *Brain Res Mol Brain Res* 16:158-162, 1992.
11. Curran T, Abate C, Baker S, Robertson L, Smeyne R, Xanthoudakis S, Morgan JI. The properties of the *fos* and *jun* oncogenes. *Adv Endocrin* 12:188-198, 1992.
12. Oberdick J, Schilling K, Smeyne RJ, Corbin JG, Bocchiaro C, Morgan JI. Control of segment-like patterns of gene expression in the mouse cerebellum. *Neuron* 10:1007-1018, 1993.
13. Smeyne RJ, Vendrell M, Hayward M, Baker SJ, Miao GG, Schilling K, Robertson LM, Curran T, Morgan JI. Continuous *c-fos* expression precedes programmed cell death *in vivo*. *Nature* 363:166-169, 1993.
14. Molinar-Rode R, Smeyne RJ, Curran T, Morgan JI. Regulation of proto-oncogene expression in adult and developing lungs. *Mol Cell Biol* 13:3213-3220, 1993.
15. Smeyne RJ, Schilling K, Oberdick J, Robertson L, Luk D, Curran T, Morgan JI. A *fos-lacZ* transgenic mouse that can be used for neuroanatomic mapping. *Adv Neurol* 59:285-291, 1993.
16. Klein R, Smeyne RJ, Wurst W, Long LK, Auerbach BA, Joyner AL, Barbacid M. Targeted disruption of the *trkB* neurotrophin receptor gene results in nervous system lesions and neonatal death. *Cell* 75:113-122, 1993.
17. Lamballe F, Smeyne RJ, Barbacid M. Developmental expression of *trkC*, the neurotrophin-3 receptor, in the mammalian nervous system. *J Neurosci* 14:14-28, 1994.
18. Klein R, Silos-Santiago I, Smeyne RJ, Lira S, Brambilla R, Bryant S, Zhang L, Snider WD, Barbacid M. Disruption of the neurotrophin-3 receptor gene *trkC* eliminates Ia muscle afferents and results in abnormal movements. *Nature* 368:249-251, 1994.
19. Smeyne RJ, Klein R, Schnapp A, Long LK, Bryant S, Lewin A, Lira SA, Barbacid M. Severe sensory and sympathetic neuropathies in mice carrying a disrupted *Trk/NGF* receptor gene. *Nature* 368:246-249, 1994.
20. Oberdick J, Wallace JD, Lewin A, Smeyne RJ. Transgenic expression to monitor dynamic organization of neuronal development: use of the *Escherichia coli lacZ* gene product, β -galactosidase. *Neuroprotocols* 5:54-62, 1994.
21. Miao GG, Smeyne RJ, D'Arcangelo G, Copeland NG, Jenkins NA, Morgan JI, Curran T. Isolation of an allele of *reeler* by insertional mutagenesis. *Proc Natl Acad Sci USA* 91:11050-11054, 1994.
22. Smeyne RJ, Chu T, Lewin A, Bian F, S-Crisman S, Kunsch C, Lira SA, Oberdick J. Local control of granule cell generation by cerebellar Purkinje cells. *Mol Cell Neurosci* 6:230-251, 1995.
23. Goldowitz D, Smeyne RJ. Tune into the weaver channel (News and Views). *Nat Genet* 11:107-109, 1995.
24. Fritsch B, Silos-Santiago, Smeyne R, Fagan AM, Barbacid M. Reduction and loss of inner ear innervation in *trkB* and *trkC* receptor knockout mice: a whole mount DiI and scanning electron microscopic analysis. *Auditory Neurosci* 1:401-417, 1995.
25. Robertson LM, Kerppola TK, Vendrell M, Luk D, Smeyne RJ, Bocchiaro C, Morgan JI, Curran T. Regulation of *c-fos* expression in transgenic mice requires multiple interdependent transcription control elements. *Neuron* 14:241-252, 1995.

26. Silos-Santiago I, Molliver DC, Ozaki S, Smeyne RJ, Fagan AM, Barbacid M, Snider WD. Non-TrkA-expressing small DRG neurons are lost in *TrkA* deficient mice. *J Neurosci* 15:5929-5942, 1995.
27. Xanthoudakis S, Smeyne RJ, Wallace JD, Curran T. The redox/DNA repair protein, Ref-1, is essential for early embryonic development in mice. *Proc Natl Acad Sci USA* 93:8919-8923, 1996.
28. Paradies MA, Grishkat H, Smeyne RJ, Oberdick J, Morgan JI, Eisenman LM. Correspondence between L7-*lacZ* expressing Purkinje cells and labeled olivocerebellar fibers during late embryogenesis in the mouse. *J Comp Neurol* 374:451-466, 1996.
29. Forrest D, Hanebuth E, Smeyne RJ, Everds N, Stewart CL, Wehner JM, Curran T. Recessive resistance to thyroid hormone in mice lacking thyroid hormone receptor β : evidence for tissue-specific modulation of receptor function. *EMBO J* 15:3006-3015, 1996.
30. Kasof GM, Smeyne RJ, Curran T, Morgan JI. Developmental expression of Fos-*lacZ* in the brains of postnatal transgenic rats. *Brain Res Dev Brain Res* 93:191-197, 1996.
31. Fagan AF, Zhang H, Landis S, Smeyne RJ, Silos-Santiago I, Barbacid M. TrkA, but not trkC, receptors are essential for survival of sympathetic neurons *in vivo*. *J Neurosci* 16:6208-6218, 1996.
32. Vassileva G, Smeyne RJ, Morgan JI. Absence of neuroanatomical and behavioral deficits in L7/*pcp-2*-null mice. *Brain Res Mol Brain Res* 46:333-337, 1997.
33. Persons DA, Allay JA, Allay ER, Smeyne RJ, Ashmun RA, Sorrentino BP, Nienhuis AW. Retroviral-mediated transfer of the green fluorescent protein gene into murine hematopoietic cells facilitates scoring and selection of transduced progenitors in vitro and identification of genetically modified cells in vivo. *Blood* 90:1777-1786, 1997.
34. Chen S-C, Ehrhard P, Goldowitz D, Smeyne RJ. Developmental expression of the GIRK family of inward rectifying potassium channels: implications for abnormalities in the *weaver* mutant mouse. *Brain Res* 778:251-264, 1997.
35. Morgan JI, Smeyne RJ. Transgenic approaches to cerebellar development. *Perspect Dev Neurobiol* 5:33-41, 1997.
36. Rice FL, Albers KM, Davis BM, Silos-Santiago I, Wilkinson GA, LeMaster AM, Ernfors P, Smeyne RJ, Aldskogius H, Phillips HS, Barbacid M, DiChiara TM, Yancopoulos GD, Dunne CE, Fundin BT. Differential dependency of unmyelinated and A δ epidermal and upper dermal innervation on neurotrophins, trk receptors, and p75^{LNGFR}. *Dev Biol* 198:57-81, 1998.
37. Rottier RJ, Hahn CN, Mann LW, del Pilar Martin M, Smeyne RJ, Suzuki K, d'Azzo A. Lack of PPCA expression only partially coincides with lysosomal storage in galactosialidosis mice: indirect evidence for spatial requirement of the catalytic rather than the protective function of PPCA. *Hum Mol Genet* 11:1787-1794, 1998.
38. Chen S-C, Kochan JP, Campfield A, Burn P, Smeyne RJ. Splice variants of the OB receptor gene are differentially expressed in brain and peripheral tissues of mice. *J Recept Signal Transduct Res* 19:245-266, 1999.
39. Hamre K, Tharp R, Poon K, Xiong X, Smeyne RJ. Differential strain susceptibility following 1-methyl-4-phenyl-1,2,3,6-tetrahydropyridine (MPTP) administration acts in an autosomal dominant fashion: quantitative analysis in seven strains of *Mus musculus*. *Brain Res* 828:91-103, 1999.
40. Faherty C, Xanthoudakis S, and Smeyne RJ. Caspase-3 dependent neuronal death in the hippocampus following kainic acid treatment. *Brain Res Mol Brain Res* 70:159-163, 1999.
41. Zindy F, Cunningham JJ, Sherr CJ, Jagal S, Smeyne RJ, Roussel M. Postnatal neuronal proliferation in mice lacking Ink4d and Kip1 inhibitors of cyclin-dependent kinases. *Proc Nat Acad Sci (USA)* 96:13462-13467, 1999.

42. Chen S-C, Cunningham JJ, and Smeyne RJ. Expression of *OB* receptor splice variants during prenatal development of the mouse. *J Recept Signal Transduct Res* 20:87-103, 2000.
43. Smeyne M, Goloubeva O, and Smeyne R.J. Strain-dependent susceptibility to MPTP and MPP⁺-induced Parkinsonism is determined by glia. *Glia* 34:73-80, 2001.
44. Kwon C-H, Zhu X, Zhang J, Knoop LL, Tharp R, Smeyne RJ, Eberhart CG, Burger PC, and Baker SJ. Pten regulates neuronal soma size: a mouse model for Lhermitte-Duclos disease. *Nat Genet* 29:404-411, 2001.
45. McKeller RN, Fowler JL, Cunningham JJ, Warner N, Smeyne RJ, Zindy F and Skapek SX. The *Arf* tumor suppressor gene promotes hyaloid vascular regression during mouse eye development. *PNAS* 99:3848-3853, 2002.
46. Cunningham JJ, Levine EM, Zindy F, Goloubeva O, Roussel M, and Smeyne R.J. The cyclin-dependent kinase inhibitors, p19^{Ink4d} and p27^{Kip1}, are coexpressed in select retinal cells and act cooperatively to control cell cycle exit. *Mol Cell Neurosci* 19:359-374, 2002.
47. Leimig T, Mann L, del Pilar Martin M, Bonten E, Persons D, Knowles J, Allay JA, Cunningham J, Nienhuis AW, Smeyne R and d'Azzo A. Functional amelioration of murine galactosialidosis by genetically modified bone marrow hematopoietic progenitor cells. *Blood* 99:3169-3178, 2002.
48. Smeyne M and Smeyne RJ. Method for culturing postnatal substantia nigra as an in vitro model of experimental Parkinson's disease. *Brain Res Brain Res Protoc* 9:105-111, 2002.
49. Cook R, Lu L, Gu J, Williams RW, Smeyne RJ. Identification of a single QTL, *Mptp1*, for susceptibility to MPTP-induced substantia nigra pars compacta neuron loss in mice. *Brain Res Mol Brain Res* 110:279-288, 2003.
50. Faherty CJ, Kerley D, Smeyne RJ. A Golgi-Cox morphological analysis of neuronal changes induced by environmental enrichment. *Brain Res Dev Brain Res* 141: 55-61, 2003.
51. Lloyd SA, Wensley B, Faherty CJ, Smeyne RJ. Regional differences in cortical dendrite morphology following *in utero* exposure to cocaine. *Brain Res Dev Brain Res* 147:59-66, 2003.
52. Zindy F, Nilsson LM, Nguyen L, Meunier C, Smeyne RJ, Rehg JE, Eberhart C, Sherr CJ, Roussel MF. Hemangiosarcomas, medulloblastomas, and other tumors in *Ink4c/p53*-null mice. *Cancer Res* 63: 5420-5427, 2003.
53. Jensen P, Smeyne RJ, and Goldowitz D. Analysis of cerebellar development in *math1* null embryos and chimeras. *J Neurosci* 24:2202-2211. 2004.
54. Lewis PM, Gritti-Linde A, Smeyne R, Kottmann A, McMahon AP. Sonic hedgehog signaling is required for expansion of granule neuron precursors and patterning of the mouse cerebellum. *Dev Biol* 270:393-410, 2004.
55. Smeyne RJ and Jackson-Lewis V. The MPTP model of Parkinson's disease. *Brain Res Mol Brain Res* 134: 57-66, 2005.
56. Faherty CJ, Shepherd KR, Herasimtschuk A and Smeyne RJ. Environmental enrichment eliminates neuronal death in experimental Parkinsonism. *Mol Brain Res* 134: 170-179, 2005.
57. Jackson-Lewis V and Smeyne RJ. MPTP and SNpc DA neuronal vulnerability: role of Dopamine, superoxide and nitric oxide in neurotoxicity. *Neurotox Res* 7:193-201, 2005.
58. Smeyne M, Jiao Y, Shepherd KR and Smeyne RJ. Glia cell number modulates sensitivity to MPTP in mice. *Glia* 52:144-152, 2005.

59. Lloyd SA, Faherty CJ, Smeyne RJ. Adult and in utero exposure to cocaine alters sensitivity to the Parkinsonian toxin 1-methyl-4-phenyl-1,2,3,6-tetrahydropyridine. *Neurosci* 137:905-913, 2006.

Book Chapters, Reviews

- 1) Smeyne RJ and Pollack JD. Foreword. Special Issue on Role of prenatal drugs of abuse on neuronal development. *Brain Res Dev Brain Res* 147:1-2, 2003.
- 2) Faherty CJ and Smeyne RJ. Cell Death in Parkinson's Disease. In: Ebadi M and Pfeiffer R, eds. *Parkinson's Disease*. Boca Raton, Florida: CRC Press, pp 523-535, 2004.
- 3) Jackson-Lewis V and Smeyne RJ. From Man to Mouse: The MPTP model of Parkinson Disease. In M. LeDoux, ed. *Animal Models of Movement Disorders*. Oxford, UK: Elsevier Academic Press, pp 149-160, 2005.

Patents

- 1) Cells that lack p19INK4D and p27KIP1 activity and methods of use thereof. United States Patent 489,505
- 2) Method for determining sensitivity to environmental toxins and susceptibility to Parkinson's disease United States Patent Application: 20040219600

Meeting(s) Organized

- 2004 - Co-organizer, Brain Research Conference - "Neurogenomics of Mice and Men" - New Orleans, LA
- 2005 - Organizer Session for 38th Winter Conference on Brain Research, "Nominations for Astro- and Micro-Glia as Best Supporting and Leading Actors in The Neurodegeneration Story" - Breckenridge, CO
- 2005 - 16th International Congress on Parkinson's Disease, Chair, Session on "Models of Neurodegeneration" - Berlin, Germany

Presentations/Invited Talks (Symposia)

- August 1993- EMBL Meeting on Mouse Molecular Genetics, Heidelberg, Germany- Effects of Genetic Ablation of Purkinje cells
- September 1994 - The Jackson Labs Workshop in Mouse Molecular Genetics, Bar Harbor, ME - The role of trk-family nerve growth factors in the development of the mammalian nervous system
- August 1994 - 10th Meeting of the European Society for Neurochemistry, Jerusalem, Israel - Trk receptors and nervous system development
- October 1994 - VII Annual Congress of the European College of Neuropsychopharmacology (ECNP), Jerusalem, Israel - Trk receptors and nervous system development
- May 1995 - Second Annual Commercial Prospects in Apoptosis Research, Cambridge, MA - Role of nerve growth factor receptors in mammalian CNS development
- July 1995 - First Gordon Conference on Cell Death, Colby-Sawyer North, Lebanon NH - Regulation of Cell Death
- October 1995 - "New Frontiers in Cell and Molecular Biology" dedicating the International Institute of Molecular and Cell Biology, Warsaw, Poland - Expression of Fos-lacZ as a Marker of Neuronal Activity

July 1997 - University of Kentucky Conference on Signal Transduction and Cell Death, Lexington, KY - Cellular Immediate Early Genes and genetics Models of Cell Death

October 1999 - VIth National Parkinson Foundation International Symposium on Parkinson's Disease Research, Miami, FL - Genetic Analysis of Strain Dependent Effects of MPTP

November 1999 - International Mouse Genome Conference, Philadelphia, PA - Genetic Analysis of Strain Dependent Effects of MPTP

January 2002 - 35th Annual Winter Conference on Brain Research, Snowmass, CO - Gene mechanisms of MPTP Sensitivity

May 2004 - Experimental Neurogenetics of the Mouse- UT-Memphis, Memphis, TN - Neuroanatomical Analysis of the Mouse nervous System

November 2004 - NIEHS Conference, Raleigh, NC - The Parkinsonian Transcriptome

January 2005 - 38th Annual Winter Conference on Brain Research, Copper Mountain, CO. Glial Cell Number and Its Relation to MPTP-sensitivity in Mice

May 2005 - Experimental Neurogenetics of the Mouse- UT-Memphis, Memphis, TN - Neuroanatomical Analysis of the Mouse Nervous System

September 2005 - Beijing International Neurodegeneration Society, Beijing, China - Genetics of Experimental Parkinsonism

Invited Seminars (Universities)

May 1992 - Bristol-Myers Squibb Pharmaceutical Research Institute, Princeton, NJ - Cellular Immediate Early Genes and Genetic Models of Cell Death.

May 1994 - The Ohio State University, Columbus, Ohio - The role of trk-family nerve growth factors in the development of the mammalian nervous system

March 1995 - Johns Hopkins University, Baltimore, MD - Neurotrophin Receptors and the Development of the Mammalian Nervous System.

March 1995 - Washington University, St. Louis, MO - Towards a genetic understanding of Parkinsonism.

March 1996 - Thomas Jefferson University, Philadelphia, PA - Signal transduction and cell death.

November 1997 - Dupont Merck Pharmaceutical Company, Wilmington, DE - Cellular Immediate Early Genes and genetics Models of Cell Death

March 1998 - Merck-Frosst, Quebec, Canada - Neuropathological Sequelae Following Disruption of the NGF and NT-3 Neurotrophin Receptors

March 2001 - The Ohio State University, Columbus, OH - Cell Biology of Experimental Parkinsonism.

June 2002 - University of Manitoba, Winnipeg, Canada - Role of Genetics and Environment in Experimental Parkinson's Disease

Nov, 2002 - NIH, Bethesda, MD - Role of Genetics and Environment in Experimental Parkinson's Disease.

December 2003 -University of Chicago, Chicago, IL - Role of Genetics and Environment in Experimental Parkinson's Disease

April 2004 - St. Jude Children's Research Hospital Graduate Student Forum- Dissection of Genetics and Environment in Experimental Parkinson's Disease

August 1994 - The Jackson Labs, Bar Harbor, ME - Dissection of Genetics and Environment in Experimental Parkinson's Disease

August 1994 - The Jackson Labs, Bar Harbor, ME - Anatomical Phenotyping of the Mouse Nervous System

September 2004 - Rosalind Franklin School of Medicine, North Chicago, IL - Genetic and Environment Mechanisms in Experimental Parkinson's Disease

October 2004 -Tufts University, Boston, MA - Dissection of Genetics and Environment in Experimental Parkinson's Disease

October 2004 - Ceregene, San Diego, CA - Genetic and Environment Mechanisms in Experimental Parkinson's Disease

December 2004 - UT-Memphis Grand Rounds, Memphis, TN - Genetic and Environment Mechanisms in Experimental Parkinson's Disease

March 2005 - Rosalind Franklin School of Medicine, Grand Rounds, Department of Medicine, North Chicago, IL - Experimental and Genetic Models of Parkinson's Disease

Teaching Activities

1986-89	Graduate Teaching Assistant for Medical Neurosciences Course, Department of Anatomy, Thomas Jefferson University, Philadelphia, PA - Course director: Leonard Eiseman, PhD
1988	Graduate Teaching Assistant for Gross Anatomy Course, Department of Anatomy, Thomas Jefferson University, Philadelphia, PA - Course director: Richard Schmidt, PhD
1989	Instructor in Medical Histology Course, Philadelphia College of Podiatric Medicine, Philadelphia, PA - Course director: Bruce Hirsch, PhD
1990-93	Instructor in Neuroscience - College of Allied Health Sciences, Thomas Jefferson University, Philadelphia, Pennsylvania
1997-present	Molecular and Developmental Neurobiology, UT-Memphis College of Graduate Studies, Memphis, TN
2003-2004	Senior Seminar - Rhodes College, Memphis, TN
2004	Visiting Scientist - The Jackson Laboratories, Bar Harbor, ME
2004-2005	Instructor - UT-Memphis, Memphis, TN - Short course: "Neurophenotyping of the Nervous System" - Sponsor: University of Tennessee Mouse Genome Consortium

Graduate Committees

Patricia Jensen, UT-Memphis, Memphis, TN (Advisor - D. Goldowitz), 1998- 2002
 David Benhayon, UT-Memphis, Memphis, TN (Advisor - T. Curran, 1999-2002
 Loren Martin, UT-Memphis, Memphis, TN (Advisor – D. Goldowitz, 1999-2003)
 Chang Hyuk Kwon, UT-Memphis, Memphis, TN (Advisor - S. Baker, 2000-2003)
 Sung-Ho Han, UT- Memphis, Memphis, TN (Advisor - J. Morgan, 2001-2002
 Keiko Yamamoto, UT-Memphis, Memphis, TN (Advisor - A. Reiner 2001)
 Xudong Wu, UT-Memphis, Memphis, TN (Advisor - J. Zuo, 2003-present)
 Xi Zhang, UT-Memphis, Memphis, TN (Advisor – P. Ney, 2005-present)
 Erin Phillips, UT-Memphis, Memphis, TN (Advisor – P. McKinnon, 2005-present)

Graduate Students Supervised in Lab

Frank Kalumne, PhD, UT-Memphis, Memphis, TN - rotating graduate student, 1999
 Debra Coomes, UT-Memphis, Memphis, TN - graduate student, 1999

Steven Lloyd, PhD, UT-Memphis, Memphis, TN - graduate student, 1999-2005
Justin Boyd, BS, UT-Memphis, Memphis, TN - graduate student, 2001-present

Postdoctoral Fellows Trained

Anne Fagan, PhD, Bristol-Myers Squibb (1992-1994) - Current position, Research Assistant Professor, Department of Neurology, Washington University School of Medicine, St. Louis, MO
Darlene Forschini, PhD, Bristol-Myers Squibb (1993-1994) - Current position, Medical Advertising, New York, NY
Patricia Ehrhard, PhD, Hoffmann-La Roche (1995-1996) - Current position, Research Leader, Department of Molecular Biology and New Technologies, Hoffmann-La Roche, Basel, Switzerland
Justine Cunningham, PhD, St. Jude Children's Research Hospital (1998-present) - Current position, Neuroscientist, Ceregene, San Diego, CA
Ciaran Faherty, PhD, St. Jude Children's Research Hospital (1998-2003) - Current position, Head of Sponsored Research, ILSI, Washington DC
Kennie R. Shepherd, PhD, St. Jude Children's Research Hospital (2003-present)
Kim Gerecke, PhD, St. Jude Children's Research Hospital (2004-present)
Brooks Pond, PhD, St. Jude Children's Research Hospital (2004-present)
Zachary Baquet, PhD, St. Jude Children's Research Hospital (2005-present)

Summer Students Supervised in Lab

Major, Emmett, UT-Memphis Health Science Center, Memphis, TN – POE student, 1997
Shamus O'Reilly, University of Bath, England, semester research, 1998
Ken Poon, University of Arkansas, POE student, 1999
Sally Slack, University of Bath, England, semester research, 2000
Kevin Masagacar, University of Michigan - SJCRH POE student, 2001
Sally Howells, University of Bath, England, semester research, 2001
Dan Kerley, University of Bath, England, semester research, 2002
Beth Wensley, University of Bath, England, semester research, 2003
Anna Herasimtschuk, University of Bath, England, 2-semester research, 2003-2004
Rachna Kumar, University of Bath, England, semester research, 2004
Daron Williams, University of Wisconsin, POE student, 2005

Journal Reviewer

Anatomy and Embryology
Brain Research
Development
Developmental Brain Research
European Journal of Neuroscience
Experimental Brain Research
Gene Expression Patterns
GLIA
Journal of Comparative Neurology
Journal of Neuroscience
Molecular Brain Research
Molecular and Cellular Neurosciences
Nature
Neurobiology of Aging
Neurodegeneration
Neuroscience
Neuroscience Letters
Neurobiology of Aging
Oncogene
Science

National Service Committees

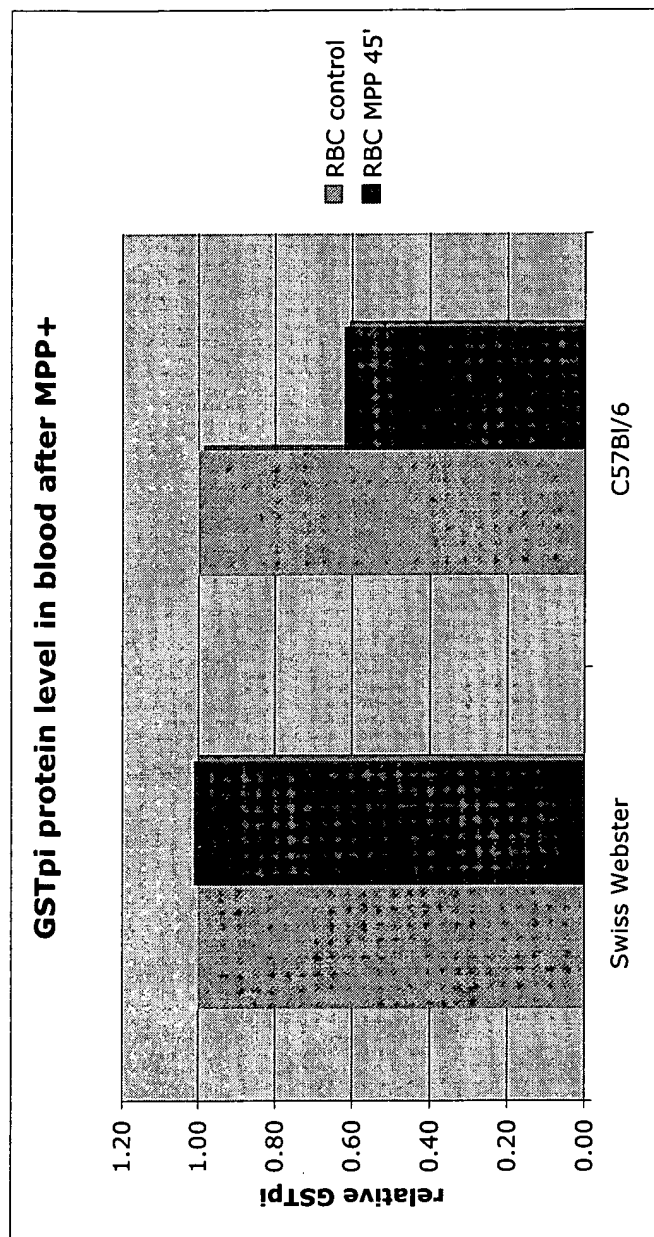
NIH Study Section member for EPSCOR Institutional Development Award, 1993-1994
 Study Section member for MBRS award, 1993
 Ad hoc study section member, Child and Maternal Health, 1998
 Ad Hoc Member, NIH MDCN-7 Study section, 1998-2000
 Regular Member, NIH MDCN-7 Study section, 2000-2003
 Ad Hoc Member, NIMH Center Grant Review Committee, 2000
 Ad Hoc Member, NIEHS Special Emphasis panel PO1 review, 2004
 Ad Hoc Member, NIEHS Superfund review Committee, 2004-2005
 Ad Hoc Member, NIH CDIN-1 study section, 2005-present

St. Jude Children's Research Hospital Committees

Animal Care and Use	1996-1998
Radiation Safety	1998-1999
Research Computing, subcommittee	2001-2003
UTHSC Graduate Admissions, liaison	2001-present
Diversity in Education	2000-2003
Faculty Appointments and Promotions, Ad Hoc	2005

Advisory Boards

1995	Scientific Advisory Board - Guilford Pharmaceuticals, Baltimore, MD
1995-1996	External Review Committee, Department of Neurology Center for the Study of Brain Injury. Washington University School of Medicine, St. Louis, MO
2004	External Advisor - American Society for Experimental NeuroTherapeutics Meeting on "Genetic Testing for Parkinson's Disease and Related Disorders," Bethesda, MD



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